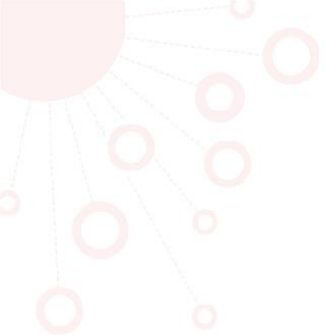




# eArche UVB Test

2018 | 10 | 08



- (1) Test purpose**
- (2) Test apparatus**
- (3) Test standard**
- (4) Test result**
- (5) Analysis of test result**
- (6) Conclusion**

**Test purpose:**

To observe the resistance yellowing performance of the eArche by using Fluorescent Ultraviolet Lamp Apparatus to simulate the effects of long-term outdoor aging.

**Test apparatus:** QUV Accelerated Weathering Tester

Test apparatus



**Test standard: ASTM-G154-16**

**Mounting of Test Specimens:** To assure uniform exposure conditions.

**Exposure to Test Conditions:** Maintain these conditions throughout the exposure.

**Specimen Repositioning:** Periodic repositioning if the irradiance at the positions farthest from the center of the specimen area is less 90%.

**Inspection:** Take care not to handle or disturb the test surface after periodic inspection.

**Maintenance:** The apparatus requires periodic maintenance to maintain control of the exposure parameters.

# Test result:

Item: UVB Test

Test Standard: ASTM-G154-16

Sample	Hours	$\Delta L$	$\Delta A$	$\Delta B$	$\Delta E$
eArche	64	0.08	0.00	-0.60	0.61
	114	0.00	0.06	-0.95	0.96
	159	0.00	0.08	-0.99	0.99
	226	-0.01	0.12	-1.21	1.21
	320	0.07	0.16	-1.28	1.29
	391	-0.02	0.18	-1.41	1.42
	482	-0.03	0.18	-1.49	1.50
	551	-0.10	0.17	-1.48	1.49
	599	-0.10	0.21	-1.54	1.55
	646	-0.11	0.19	-1.52	1.54
	712	-0.13	0.18	-1.55	1.56
	782	0.28	0.27	-1.06	1.13
	878	0.06	0.24	-1.30	1.33
	926	0.09	0.23	-1.28	1.30
	971	-0.03	0.23	-1.42	1.44
	1041	-0.06	0.21	-1.43	1.44
	1110	-0.14	0.20	-1.46	1.48
	1228	-0.09	0.24	-1.53	1.55
	1300	-0.14	0.23	-1.52	1.54
	1372	-0.18	0.25	-1.53	1.56
1414	-0.21	0.24	-1.48	1.51	
1460	-0.29	0.22	-1.47	1.51	
1535	-0.14	0.21	-1.45	1.47	

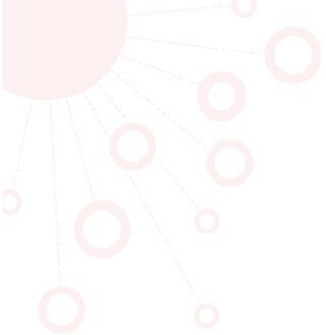


## Analysis of test result :

- (1) “B” denotes the yellow-blue color of an object.  $\Delta B$  denotes the color difference between the sample and the standard sample, positive value of  $\Delta B$  denotes that the sample is yellower than the standard sample, negative value of  $\Delta B$  denotes that the standard sample is yellower than the standard sample.
- (2) The  $\Delta B$  value of eArche after 1535 hours test is -1.45.
- (3) Generally speaking, in the photovoltaic industry, the  $\Delta B$  value is between 1 and 2, the degree of yellowing is acceptable.

## Conclusion:

- (1) The  $\Delta B$  value of eArche after 1535 hours test is -1.45, so we think eArche passed the yellowing test, and eArche will not turn yellow during long-term outdoor using.



THANKS!

**SUNMAN**  
S O L A R   S P E C I A L I S T

